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PROPOSAL FOR DEVELOPMENT OF NOVEL TECHNIQUES FOR COOLING TURBINE BLADES

7. Author(s) B.R. Pai
S.R. Rajagopalan
D. Rajanna

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14. Keywords : Turbine blade cooling, Heat Transfer, Gas Turbines.

15. Abstract : A proposal for novel fabrication of cooled blades is proposed. This involves only well established processes such as electron beam welding and electrochemical milling. The idea is to form grooves on a solid blade and then attach a thin skin around it by means of electron beam welding. Theoretical analysis and preliminary experiments have shown greatly improved performance of such a cooling system, which can be modified to include film cooling, multipass and impingement cooling. The scope of the project includes development of blades upto demonstrating running in a gas turbine engine. Expected duration is about 5 years and cost Rs. 99.92 lakhs.

NATIONAL AERONAUTICAL LABORATORY
BANGALORE, INDIA